

## REMARKS

Claims 1-6, 9-15, and 23-28 were previously pending. Claims 13-15 and 23-28 were withdrawn as being directed to non-elected inventions. Non-elected claims 13-15 and 23-27 have now been canceled. Claims 2 and 3 have also been canceled. Claims 1, 4-6, and 9-12, and 28 have been amended and new claims 29-40 have been added. Upon entry of the present Amendment, claims 1, 4-6, 9-12, and 28-40 will be pending in the Application, of which claim 28 has been withdrawn.

Claim 1 has been amended in an effort to better define the claimed invention. In particular, claim 1 has been amended to recite that the pigment composition is in “the form of a powder” for a powder coating composition, as supported by cancelled claim 2 and made by dispersing the pigment preparation in a solvent or solvents (C) to form a dispersion, as supported by canceled claim 3 and further on page 17, lines 25-27, and page 19, lines 4-6. Claim 1 has been further amended to recite pulverizing or granulating the mixture solidified (A/B) to obtain pigment particles that have an average particle size of 1 to 200  $\mu\text{m}$ , as supported at least on page 15, lines 22-23, and page 16, lines 20-22. Finally, claim 1 has been amended to recite “applying the dispersion to the surface of dimensionally stable particles with partial, substantially complete, or complete evaporation of the solvent or solvents (C) to form coated dimensionally stable particles in the form of a powder,” as supported on page 19, lines 3-6, and page 24, lines 10-11.

Claims 4-6 and 9-12 have been amended for the purpose of antecedent basis with amended claim 1.

Amendments to, cancellation of, and additions to, the claims, as set forth above, are made in order to streamline prosecution in this case by limiting examination and argument to certain claimed embodiments that presently are considered to be of immediate commercial significance. Amendment or cancellation of the claims is not in any manner intended to, and should not be construed to, waive Applicants' right in the future to seek such unamended or cancelled subject matter, or similar matter (whether in equivalent, broader, or narrower form) in the present application, and any continuation, divisional, continuation-in-part, RCE, or any other application claiming priority to or

through the present application, nor in any manner to indicate an intention, expressed or implied, to surrender any equivalent to the claims as pending after such amendments or cancellations.

Reconsideration is respectfully requested in view of the foregoing amendments and/or following remarks.

Briefly, to recap, the present invention is directed to a pigment in the form of a powder for a powder coating composition, which powder is made by the process of forming a pigment preparation by dispersing at least one pigment (A) in a melt of at least one carrier material (B) in a discontinuously operating dispersing apparatus with a power input of from 0.1 to 1.0 kW/kg to form a mixture (A/B), discharging the mixture (A/B) from the dispersing apparatus and allowing it to cool and solidify, then pulverizing or granulating the mixture solidified (A/B) to obtain pigment particles that have an average particle size of 1 to 200  $\mu\text{m}$ , dispersing the pigment preparation in a solvent or solvents (C) to form a dispersion; and applying the dispersion to the surface of dimensionally stable particles with partial, substantially complete, or complete evaporation of the solvent or solvents (C) to form coated dimensionally stable particles in the form of a powder.

1. **Rejection of claims 1-6 and 9-12 under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 4,234,466 to Takahashi et al., hereafter "Takahashi".**

The Office Action states that Takahashi discloses a solid pigment composition comprising polymer such as polyester and titanium oxide dispersed therein, wherein the composition comprise 60% of titanium oxide and 40% of polyester (example 2), wherein the composition is in powder form or is in a solvent solution or solvent mixture.  
12/24/2008 Office Action page 3, lines 1-17.

Applicants greatly appreciate the detailed basis of rejection but must respectfully disagree to the extent the rejection applies to the amended claims.

Takahashi teaches a process for preparing a pigment composition which comprises subjecting a liquid composition comprising at least one ethylenically

unsaturated polymerizable compound, at least one resin dissolved or dispersed therein, and at least one pigment dispersed therein to suspension or bulk polymerization, if necessary, with previous color matching. (Takahashi, abstract).

First, Takahashi does not disclose a pigment composition having from 50 to 85% by weight of a pigment (A), based on the total weight of the solid pigment preparation, wherein the solid pigment preparation has been made by Applicants' particularly required process. As can be noted, the dispersion comprising 60% titanium oxide (10  $\mu\text{m}$ ) is mixed with approximately equal parts of monomers, which reduce the amount of titanium oxide about in half.

Thus, the portion of Takahashi relied upon by the PTO relates to a mixing of pigment, polymer, and prepolymerization components before they are subjected to the polymerization step that Takahashi requires before the resultant pigment composition is cooled, washed, and dried to give a solid pigment dispersed composition. *See '466, col. 4, lines 16-60 and col. 8, lines 10-47.* Takahashi does not disclose Applicants' claimed pigment preparation.

Furthermore, Takahashi does not disclose dispersing the pigment preparation in a solvent or solvents (C) to form a dispersion and applying the dispersion to the surface of dimensionally stable particles with partial, substantially complete, or complete evaporation of the solvent or solvents (C) to form coated dimensionally stable particles in the form of a powder. Rather, the Office Action apparently refers to Takahashi dispersing the particles in acetone in order to determine the particle size of the pigments and to confirm that coagulation of particles has not taken place. Takahashi at col. 9, lines 7-10.

In fact, there are numerous and substantive differences between Takahashi and the presently claimed invention. Among these is the fact, for example, that there is a sand grinder mixing (as mentioned in Takahashi col. 8, lines 20-22) to provide a particle size of the pigment of 10  $\mu\text{m}$  or less, followed by a polymerization to make the actual solid dispersed pigment composition. Thus, Takahashi teaches a premixing of the prepolymerization components and the subsequent transfer of the sand grinder 'mixture' into

a vessel. Takahashi's solid dispersed pigment composition results only after polymerization and must be cooled and filtered, followed by washing, drying, and pulverization.

This is radically different from Applicants' claimed process whereby the solid pigment preparation exits from the required kneader in melt form, cooling and pulverization occur, and the resulting particles are then used to coat dimensionally stable particles. As presently amended, Applicants' pigment composition now requires that a dispersion of pigment particles is applied to the surface of dimensionally stable particles with partial, substantially complete, or complete evaporation of solvent to form coated dimensionally stable particles in the form of a powder. In contrast, as evident by Examples 7-13 of Takahashi, the pigment particles such as made in example 1 of Takahashi, prepared by dispersing pigment a mixture of monomers and polymer, are merely added to a liquid varnish by the aid of a sand grinding mill or a ball mill, resulting in color pastes for tinting, which in turn is used to make a color matched solid paint composition which is coated electrostatically on the surface of a steel panel. See, for example, col. 12, lines 38-57.

Therefore, taken as a whole, it is submitted Takahashi fails to anticipate the invention of Applicants' amended independent claim 1 and all claims dependent thereon. "The true test of any prior art relied on to show or suggest that a chemical compound is old is whether the prior art is such as to place that compound in the possession of the public." *In re Brown*, 329 F.2d 1006, 141 U.S.P.Q. 245 (C.C.P.A. 1964). Moreover, the single source must disclose all of the claimed elements 'arranged as in the claim'. *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). In particular, it is respectfully submitted that one of skill in the art would never be able to obtain Applicants' claimed product given the disclosures of Takahashi.

Accordingly, it is respectfully submitted that the invention of amended independent claim 1 is novel over Takahashi. Reconsideration and removal of the anticipation rejection based on Takahashi is respectfully requested.

**2. Rejection of claims 1-6 and 12 under 35 U.S.C. §103(a) as being unpatentable over United States Patent No. 6,168,895 to Metz et al., hereafter "Metz".**

The Office Action states that Metz discloses a composition comprising a polymer binder such as polyester and pigment, wherein the pigment amount is in the range of 0.01-50%, which ranges are considered "overlapping" ranges. 12/24/2008 Office Action page 4, last two paragraphs. The Office Action further states that Metz discloses that the composition is in powder form, the pigment can be added in the resin in organic solvent, the composition comprises an azo organic pigment, and polyester is used as a polymer binder. 12/24/2008 Office Action page 5, lines 1-8.

Applicants greatly appreciate the detailed basis of rejection but must respectfully disagree to the extent the rejection applies to the amended claims.

Metz teaches an azo pigment of the formula (1), which has a specific surface area of the pigment powder of more than 45 m<sup>2</sup>/g. (Metz, abstract). Typical powder coating resins employed are epoxy resins, polyester resins containing carboxyl and hydroxyl groups, polyurethane resins and acrylic resins, together with the conventional curing agents. Combinations of resins are also used. (Metz, column 5, lines 54-58). The pigment is incorporated into the binder homogeneously, for example by extrusion or kneading, at a concentration of from 0.01 to 50% by weight, preferably from 0.5 to 20% by weight and particularly preferably from 0.1 to 5.0% by weight, based on the total mixture. (Metz, column 16, lines 26-31).

In contrast, Applicants' independent claim 1 is directed to a solid pigment preparation comprising 50 to 85% by weight of at least one pigment (A), based on the total weight of the solid pigment preparation and (B) at least one carrier material selected from the group consisting of oligomers and polymers which have a glass transition temperature greater than 30°C and a melting point or melting range below their decomposition temperature.

Applicants' solid pigment preparation is prepared by dispersing the pigment or pigments (A) or the pigment or pigments (A) and at least one constituent (D) in the melt of the carrier material or carrier materials (B) or in the melt of the carrier material or carrier materials (B) and at least one constituent (D) for from 0.5 to 5 hours in a discontinuously operating dispersing apparatus with a power input of from 0.1 to 1.0 kW/kg, and then discharging the mixture (A/B) or (A/B/D) from the dispersing apparatus and allowing it to cool and solidify.

Furthermore, as presently amended, this pigment preparation is then used to form a dispersion of pigment particles which is applied to the surface of dimensionally stable particles with partial, substantially complete, or complete evaporation of solvent to form coated dimensionally stable particles in the form of a powder. In contrast, Metz takes the pigmented particles and directly forms an electrostatic toner (col. 21, lines 37-46), a printing ink, or a colored plastic (col. 23, lines 15-67).

Accordingly, it is respectfully submitted that the invention of amended independent claim 1 is unpatentable over Metz. Reconsideration and removal of the obviousness rejection based on Metz is respectfully requested.

### **3. Response to Arguments**

In making the instant rejection, the Examiner relies on *Thorpe* as basis for disregarding Applicants' uniquely required product-by-process limitations. 12/24/2008 Office Action page 2, paragraph 2. However, Applicants respectfully submit that *Thorpe* supports the patentability of the instant claims. The holding of *Thorpe* is that "if the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 77F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, in view of *Thorpe*, the patentability of a product does indeed depend on its method of production if the product in the product-by-process claim is different or unobvious from a product of the prior art.

Independent claim 1 is directed to a pigment composition in the form of a product by process claim. A pigment composition can be characterized according to several properties, including gloss. If two pigment preparations comprising the same constituents at the same weight percentage have substantially different gloss values, it can be deduced that the two pigment preparations are different.

Applicants respectfully assert that two compositions comprising a pigment and a carrier material and consisting of exactly the same components in the same weight percentage (wt%), when one is formed into a pigment preparation using a conventional technique, and the other is formed into a pigment preparation according to Applicants' independent claim 1, the two pigment preparations thus produced are substantially different. This is evidenced, for example, in Applicants' Inventive Examples 7 when compared to Applicants' Comparative Examples C7, based on the data tabulated in Table 4, page 35 of the present application.

It can be seen from the above data that the properties of the pigment preparations produced according to Applicants' independent claim 1 are substantially different, as evidenced by the gloss values. Two products cannot be the same when they have different properties. Therefore, Applicants have demonstrated that the product, produced according to Applicants' product-by-process claim, is not the same as or obvious from that of the product of the prior art, and is indeed different. According to *Thorpe*, this is at least sufficient for the product-by-process claim to be given patentable weight.

In response, the PTO has justified ignoring Applicants' comparative data on the grounds that the data is not based on the prior art of record, i.e., Metz and/or Takahashi. However, it is submitted that Applicants' foregoing data compares the claimed invention against prior art that is closer than that currently relied upon by the PTO. It will be appreciated that such is allowed by MPEP 716.02 (e). As stated therein, Applicants may compare the claimed invention with prior art that is more closely related to the invention than the prior art relied upon by the examiner. *In re Holladay*, 584 F.2d 384, 199 USPQ 516 (CCPA 1978); *Ex parte Humber*, 217 USPQ 265 (Bd. App. 1961)

In this case, Applicants' working examples change only the variables relating to the specific process and equipment by which the comparative pigment preparations are made. More particularly, Applicants' working Example 7 employs the required kneader, while comparative examples C1 and C2, used in C7, employ a stirrer mill with zirconium dioxide grinding media. Differences in formulations were attributable solely to equipment limitations and requirements such as viscosity requirements. It is therefore respectfully submitted that Applicants' working examples compare the claimed products and the process by which they are made against comparative examples that are closer than those of the cited prior art.

Nor are Applicants required to incorporate a gloss limitation into the claims. Rather, the gloss and tint strength data discussed above are merely to show that the claimed process limitations do result in a product that is different.

Finally, the fact that the presently claimed particles involve a coating of one type of particle on a different dimensionally stable particle provides a clear structural feature resulting from the product by process claim that is not present in the pigment particles of the cited references to Takahashi and Metz.

Therefore, in view of *Thorpe*, Applicants' claimed product does indeed depend on its method of production, since Applicants' claimed pigment composition is different from the pigment compositions of the prior art.

#### **4. New Claims**

New claims 29 to 40 further distinguish from the prior art references to Takahashi and Metz. In particular, new independent claim 39 contains all the limitations of claim 1 and also requires applying the dispersion to the surface of dimensionally stable particles "in a fluidized bed" wherein the dimensionally stable particles "comprise a polymer that is curable thermally and/or with actinic radiation," as supported at least on page 23, lines 15-23, and page 20, lines 21-24. There is no mention whatsoever of employing a fluidized bed to modify the pigment composition in Takahashi or Metz.

New independent claim 40 contains all the limitations of claim 39 and further requires “applying simultaneously or successively to the surface of the dimensionally stable particles at least two materially different dispersions” to the surface of dimensionally stable particles in the fluidized bed, as supported at least page 19, lines 8-11. Claim 40 also requires that the dimensionally stable particles “are unpigmented and comprise a polymer that is curable thermally and/or with actinic radiation,” as supported at least on page 34, line 22, and page 12, lines 22-25, and page 20, lines 26-29. This limitation is completely lacking in Metz or Takahashi.

Numerous other distinctions from the cited references can be pointed out. Dependent claims 29 requires that the dispersion have a solids content of 20 to 80% and that the powder is substantially free from organic solvents and is free-flowing with a residual volatile solvent content of less than or equal to 15% by weight, as supported at least on page 20, lines 15-19, and page 18, line 20. Dependent claim 30 requires that at least two materially different dispersions be applied simultaneously or successively to the surface of the dimensionally stable particles, as supported at least on page 19, lines 8-11. Claim 31 requires that the dimensionally stable particles comprise finished pigmented particles, as supported at least on page 22, lines 9-12. Claim 32 requires that the dimensionally stable particle is a universal powder that is coatable with any of a wide variety of dispersions, as supported at least on page 23, lines 6-9.

Claim 33 requires that the dimensionally stable particles comprise functional constituents (D) comprising crosslinking agents, photoinitiators, or combinations thereof, as supported at least on page 21, line 23. Claim 34 requires that the dimensionally stable particles comprise a photoinitiator and an actinic-radiation-curable binder, as supported at least on page 21, lines 15-23. Claim 35 requires that the dimensionally stable particles comprises at least one dual-cure binder or at least one thermally curable binder and at least one actinic-radiation curable binder, as supported at least on page 20, lines 21-24. Claim 36 requires that the dispersion is applied by spraying and Claim 37 requires that the dispersion be applied by spraying in a fluidized bed, as supported at least on page 23, lines 15-20. Claim 38 requires that the coated dimensionally stable particles are discharged from the fluidized bed and optionally returned to the fluidized bed in which

they are coated with the same dispersion and/or with other dispersions, as supported at least on page 24, lines 10-15.

**CONCLUSION**

Applicants respectfully submit that the Application and pending claims are patentable in view of the foregoing remarks. A Notice of Allowance is respectfully requested. As always, the Examiner is encouraged to contact the Undersigned by telephone if direct conversation would be helpful.

Respectfully Submitted,

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